

REMARKS

Claims 1-18, as amended, remain herein. Claims 11-18 are presently withdrawn from consideration. Support for the amendments may be found, for example, in applicant's specification at p. 21, line 4-p. 23, line 20.

1. Claims 1-10 were rejected under 35 U.S.C. § 112, first paragraph. Claims 1-10 are amended, mooting the rejection. Claims 1 and 9 are amended to clarify that peak detection outputs of the first and second detection elements are used to determine a type of contact with the slider.

As discussed in applicant's specification, first and second detection elements, 12 and 12b, respectively, detect vibrations of a disk 1 or of an arm 6. As shown in Fig. 11a, a slider 2 floats above a surface of a disk 1. Figs. 11b and 11d illustrate two types of contact that may occur between the slider 2 and the disk, which may be distinguished by the method and apparatus disclosed in the claims.

In Fig. 11b, the suspension 4 (including the base plate 18, load beam 17, and flexure 16) is raised. See Specification, p. 20, lines 18-28; p. 21, lines 15-17. This may generate a squeeze force on the slider 2 that causes the slider to contact the disk 1. Specification, p. 21, lines 17-20, 32-33. Thus, 11b illustrates a first type of contact. Specification, p. 22, lines 20-26. This contact between the slider and disk generates peak outputs on the first and second detection elements, 12 and 12b. Specification, p. 21, line 34-p. 22, line 3.

As the suspension 4 is lifted further, as shown in Fig. 11c, the slider 2 disengages from the disk 1, and the flexure 16 contacts the dimple 19. Specification p. 21, lines 23-26. This contact is called “dimple contact” and is detected only by the second detection element 12b, causing the second detection element to generate a peak output. Specification, p. 21, lines 26-27, p. 22, lines 8-13.

The springy nature of the dimple 19 may cause the flexure 16 to rebound towards the disk 1, causing the slider 2 to again contact the disk. Fig. 11d illustrates this second type of contact. Specification, p. 21, lines 28-p. 22, line 3; p. 22, lines 14-17.

The type of contact (whether the first type or the second type) may be determined by determining whether the contact occurred before or after a dimple contact. Specification, p. 22, lines 20-26.

Regarding sensor 12b referred to on p. 20; the sensor 12b is not shown in Figs. 11a-d, but is shown in Fig. 8. However, the relationships among Figs. 1, 2, and 8-11d are described in the specification to enable one of ordinary skill to make and/or use the invention. See Specification, p. 20, line 18-p. 21, line 3. Specification, p. 20, line 27 states that “the load beam 17 is attached to the arm 6 (not shown) through a base plate 18,” which describes how the structures of Figs. 9, 10 and 11a-11d are connected to the structures of Figs. 1, 2 and 8.

For the reasons discussed above, one of ordinary skill in the art could make and use the method and apparatus of the claims by referring to the specification. Reconsideration and withdrawal of the rejection are respectfully requested.

2. Claims 1-10 were rejected under 35 U.S.C. § 112, second paragraph. The claims have been amended, mooted the rejection. Reconsideration and withdrawal of the rejection are respectfully requested.

3. Claims 1-3, 9 and 10 were rejected under 35 U.S.C. § 102(b) over Taniguchi U.S. Patent 6,105,432. However, Taniguchi fails to disclose determining a type of contact between the slider and the magnetic disk, as recited in applicant's claims 1 and 9. On the contrary, Taniguchi discloses only whether contact has occurred.

Taniguchi further fails to disclose a measurement device for determining whether a maximum value of an output from a first detection element is detected before or after a maximum value of an output from a second detection element, as recited in applicant's claim 9. As discussed above, Taniguchi discloses detecting only whether a slider has contacted a disk, not what type of contact has occurred.

Since Taniguchi fails to disclose every element of applicant's claims 1 and 9, Taniguchi is an inadequate basis for rejecting claims 1-3, 9 and 10 under 35 U.S.C. § 102(b). Reconsideration and withdrawal are respectfully requested.

4. Claims 4-8 were rejected under 35 U.S.C. § 103(a) over Taniguchi. For the reasons discussed above, Taniguchi fails to disclose every element of applicant's claim 1, from which claims 4-8 depend. Nor would it have been obvious to one of ordinary skill in the art to modify Taniguchi to disclose every element of applicant's claims. Neither Taniguchi nor anything else in this record discloses determining a type of contact between a

slider and a disk based on sensors located adjacent to an arm and the disk. Nor does Taniguchi disclose any teaching that would have motivated one of ordinary skill in this art to determine a type of slider/disk contact.


For the foregoing reasons, Taniguchi is an inadequate basis for rejecting claims 4-8 under 35 U.S.C. § 103(a). Reconsideration and withdrawal are respectfully requested.

Accordingly, all claims 1-10 are now fully in condition for allowance and a notice to that effect is respectfully requested. The PTO is hereby authorized to charge/credit any fee deficiencies or overpayments to Deposit Account No. 19-4293. If further amendments would place this application in even better condition for issue, the Examiner is invited to call applicant's undersigned attorney at the number listed below.

Respectfully submitted,

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